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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|----------------------------|-------------|----------------------|---------------------|------------------|
| 09/768,271 | 01/25/2001 | Tsukasa Yajima | PNET.009D | 3802 |
| 7590 04/22/2005 | | | EXAMINER | |
| JONES & VOLENTINE, L.L.P. | | | MAI, ANH D | |
| Suite 150 | | | ART UNIT | |
| 12200 Sunrise Valley Drive | | | 2814 | |
| Reston, VA 20191 | | | PAPER NUMBER | |

DATE MAILED: 04/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Application No.

09/768,271

| Applicant(s) |
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YAJIMA, TSUKASA

Examiner

Anh D. Mai

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| Art Unit |
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2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 April 2005.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-9 and 11-19 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-9 and 11-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 2814

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114 was filed in this application after a decision by the Board of Patent Appeals and Interferences, but before the filing of a Notice of Appeal to the Court of Appeals for the Federal Circuit or the commencement of a civil action. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on April 15, 2005 has been entered.

Status of the Claims

2. Amendment filed April 15, 2005 has been entered. Claims 6, 11, 14 and 16 have been amended. Claims 6-9 and 11-19 are pending.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 6-9 and 11-19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the

Art Unit: 2814

relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

There does not appear to be a written description of the claim limitation “whereby edges of said protective layer are not covered by side walls” (as recited in amended claims 1, 11 and 16) in the application as filed.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 6-9 and 11-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term “whereby edges of said protective layer are not covered by side walls” was a negative limitation that rendered the claim indefinite because it was an attempt to claim the invention by excluding what the inventor *did not invent* rather than distinctly and particularly pointing out what they did invent. See *In re Schechter*, 205 F.2d 185, 98 USPQ 144 (CCPA 1953). (See MPEP 2173.05(i)). Any negative limitation or exclusionary proviso *must have* basis in the original disclosure. See *In re Johnson*, 558 F.2d 1008, 1019, 194 USPQ 187, 196 (CCPA 1977).

Further, the added term “whereby edges of said protective layer are not covered by side walls” contradicting the following limitation “an insulating layer, a contact hole, and a connecting wire formed above a surface of the substrate”.

Art Unit: 2814

The term “formed above a surface of the substrate” means the edges of protective layer are covered by side walls. (See Fig. 1(i)).

The side walls of the protective are both **covered** and **uncovered** at the same time, thus the claims are indefinite.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 6-9 and 11-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoo et al. (U.S. Patent No. 5,605,853) of record.

With respect to claim 6, as best understood by the examiner and insofar as the apparatus is concerned, Yoo teaches a semiconductor device as claimed including:

first and second gates (16) formed on an active region of a substrate (10), the first and second gates each consisting of a refractory metal layer (28) on a polysilicon layer (16);

a field oxide (12) formed on the substrate (10) between the first and second gate (16);

side walls formed on side surfaces of the first and second gates (16), the side walls being a silicon oxide film;

a protective layer (21) formed selectively on the field oxide (12) to prevent overetching of the field oxide,

Art Unit: 2814

the protective layer (21) being a conductive layer and having an edge thereof on the field oxide (12), whereby edges of the protective layer are covered by side walls; and

an insulating layer (38), a contact hole, and a connecting wire (40) formed above the surface of the substrate (10). (See Fig. 7, col. 3-5).

Product by process limitation:

The expression “to prevent overetching of said field oxide” (claims 6, 11 and 16) is taken to be a product by process limitation and is given no patentable weight. A product by process claim directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See *In re Fessman*, 180 USPQ 324, 326 (CCPA 1974); *In re Marosi et al.*, 218 USPQ 289, 292 (Fed. Cir. 1983); and particularly *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985), all of which make it clear that it is the patentability of the final structure of the product “gleaned” from the process steps, which must be determined in a “product by process” claim, and not the patentability of the process. See also MPEP 2113. Moreover, an old and obvious product produced by a new method is not a patentable product, whether claimed in “product by process” claims or not.

Note that, since the protective layer (21) of Yoo is formed on the field oxide (12), thus, the protective layer (21) is capable of preventing overetching of the field oxide as well.

The same reason also applies to claims 11 and 16 as well.

Art Unit: 2814

With respect to claim 11, as best understood by the examiner, Yoo teaches a semiconductor device as claimed including:

- a gate (16) formed on an active region of a substrate (10);
- a field oxide (12) formed on the substrate adjacent the active region;
- a protective layer (21) formed on the field oxide (12) to prevent overetching of the field oxide;
- the protective layer (21) being a conductive layer and having an edge thereof on the field oxide (12), whereby edges of the protective layer are covered by side walls; and
- an insulating layer (38), a contact hole, and a connecting wire (40) formed above the surface of the substrate (10),
- the protective layer (21) being formed on the field oxide (12) only. (See Fig. 7, col. 3-5).

With respect to claim 16, as best understood by the examiner, Yoo teaches a semiconductor device as claimed including:

- a gate (16) formed on an active region of a substrate (10), the gate (16) consisting of a refractory metal layer (28) on a polysilicon layer (16);
- side walls formed on side surfaces of the gates (16), the side walls being a silicon oxide film;
- a field oxide (12) formed on the substrate (12) adjacent the active region;
- a protective layer (21) formed on the field oxide (12) to prevent overetching of the field oxide,

Art Unit: 2814

the protective layer (21) being a conductive layer and having an edge thereof on the field oxide (12), whereby edges of the protective layer are covered by side walls; and

an insulating layer (38), a contact hole, and a connecting wire (40) formed above the surface of the substrate (10),

the protective layer (21) being formed on the field oxide (12) only. (See Fig. 7, col. 3-5).

With respect to claims 7, 12, 17, the protective layer (21) is a polysilicon layer.

With respect to claim 8, the protective layer (21) of Yoo is formed on the field oxide (21) only.

With respect to claims 9, 13, 18, the gate (16) is a MOSFET gate.

With respect to claim 14, the semiconductor device of Yoo further comprises side walls formed on side surface of the gate (16), the side walls being covered by the insulating layer (38).

With respect to claims 15, 19, the semiconductor device of Yoo further comprising an additional gate (16) formed on the substrate (10), the field oxide (12) being formed on the substrate between the gate (16) and the additional gate (16).

Response to Arguments

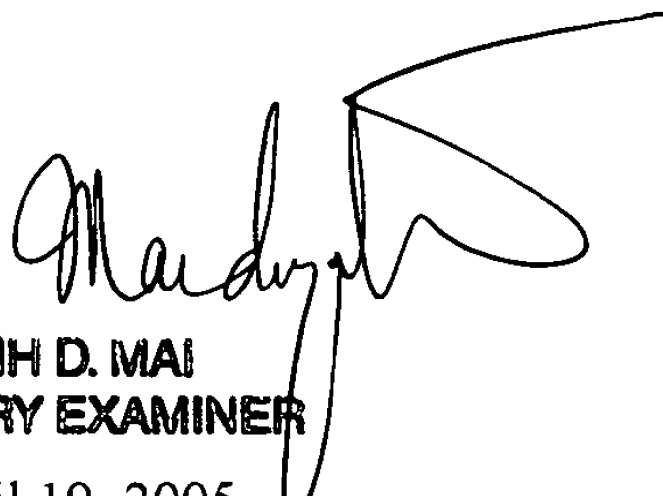
6. Applicant's arguments with respect to the amended claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh D. Mai whose telephone number is (571) 272-1710. The examiner can normally be reached on 9:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571) 272-1705. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


ANH D. MAI
PRIMARY EXAMINER
April 19, 2005